

We Claim:

1. A method for amplifying expressed genetic sequences from gDNA selected from a mammalian or higher order plant species, for printing on DNA microarrays, the method comprises:

identifying either 1) a 3'UTR of a gDNA sequence based on the presence of a stop codon and a polyadenylation signal in the gDNA sequence corresponding to an expressed mRNA sequence, or 2) an exon of a gene defined by computer software;

selecting a predetermined gDNA sequence within the 3'UTR or exon;

designing a probe for said predetermined gDNA sequence;

performing a first polymerase chain reaction (PCR) for the 3'UTR or exon on gDNA to generate PCR-product;

separating the resultant PCR-product by a size-differentiation process selected from the group consisting of electrophoresis and chromatography;

selecting a predetermined band from the size-differentiated samples; and

performing a second polymerase chain reaction to amplify predetermined sequence;

2. The method according to claim 1, wherein a plurality of said final amplified sequences are deposited on a substrate in an array.

3. The method according to claim 1, wherein said final amplified sequences are the sequence of one exon and contains no polyadenosine.

4. The method according to claim 1, wherein said predetermined gDNA sequence within the 3'UTR or exon is selected by use of computer software.

5. The method according to claim 1, wherein said selected predetermined gDNA sequence within the 3'UTR or exon has a length of about 75 to about 2000 bases.

6. The method according to claim 5, wherein said selected predetermined gDNA sequence has a length of about 200 to about 600 bases.
7. The method according to claim 6, wherein said selected predetermined gDNA sequence has a length of about 250 to about 450 bases.
8. The method according to claim 1, wherein said selected predetermined gDNA sequence has an overall homology of less than or equal to about 70% to any other genomic sequence in the same genome.
9. The method according to claim 8, wherein said selected predetermined gDNA sequence has an overall homology of less than or equal to about 40% to any other genomic sequence in the same genome.
10. The method according to claim 8, wherein said selected predetermined gDNA sequence has an overall homology of from about 20% to 30% to any other genomic sequence in the same genome.
11. The method according to claim 1, wherein said method can generate PCR products that contain over 90 percent correct predetermined sequence.
12. The method according to claim 1, wherein said array is a rectilinear format.
13. An biological analysis device comprising a substrate and an array of a set of expressed genetic sequences from gDNA selected from a mammalian or higher order plant species located on the substrate, wherein the genetic sequences are generated according to a method that comprises:
 - either 1) a 3'UTR of a gDNA sequence based on the presence of a stop codon and a polyadenylation signal in the gDNA sequence corresponding to an expressed mRNA sequence, or 2) an exon of a gene defined by computer software;
 - selecting a predetermined gDNA sequence within the 3'UTR or exon;

designing a probe for said predetermined gDNA sequence;
performing a first polymerase chain reaction (PCR) for the 3'UTR or exon on
gDNA to generate PCR-product;
separating the resultant PCR-product by a size-differentiation process selected
from the group consisting of electrophoresis and chromatography;
selecting a predetermined band from the size-differentiated samples; and
performing a second polymerase chain reaction to amplify predetermined
sequence.

14. The device according to claim 13, wherein said expressed sequences are printed
onto said substrate.

15. The device according to claim 13, wherein said expressed sequences are
arranged in a rectilinear array.

16. The device according to claim 13, wherein said selected predetermined gDNA
sequence within the 3'UTR or exon has a length of about 75 to about 2000 nucleotides.

17. The device according to claim 13, wherein said selected predetermined gDNA
sequence has a length of about 200 to about 600 nucleotides.

18. The device according to claim 17, wherein said selected predetermined gDNA
sequence has a length of about 250 to about 450 nucleotides.

19. The device according to claim 13, wherein said amplified sequences are the
sequence of at least one exon and contains no polyadenosine or vector sequence.

20. The device according to claim 13, wherein said substrate is made of a material
selected from the group consisting of glass, polymer, or metallic surfaces.

21. A DNA high-density microarray comprising: a substrate upon which are deposited an array of biosites of genomic DNA fragments having the sequence of at least one exon, and absent polyadenine and vector sequences, said genomic DNA fragments having a sequence length of from about 75 to about 2000 nucleotides.
22. The microarray according to claim 21, wherein said gDNA fragments have a sequence complementary to a 3'UTR of a gene.
23. The microarray according to claim 21, wherein said gDNA fragments have a sequence of a hypothetical exon.
24. The microarray according to claim 21, wherein said gDNA fragments have a sequence of a partial exon.
25. The microarray according to claim 21, wherein said selected predetermined gDNA sequence has a length of about 200 to about 800 nucleotides.
26. The microarray according to claim 21, wherein said substrate is made of a material selected from the group consisting of glass, polymer, or metal.